

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON.

ON A SMALL COLLECTION OF MAMMALS FROM
LAKE EDWARD, QUEBEC.

BY OUTRAM BANGS.

Early in September, 1895, my brother, E. A. Bangs, and I made a short collecting trip to Quebec. Our original plan was to spend all our time at Roberval, on Lake St. John, the most northern locality reached by railroad in eastern North America. But Lake St. John proved a great disappointment. The town of Roberval lies in a dreary valley, that seems wholly destitute of mammalian life. The forest has been cleared away and the barren fields and desolate scrub are wholly unfit to supply the needs of even the smaller mammals. Had we been fitted for camping out we could undoubtedly have found a rich field up one of the many rivers that pour their waters from every direction into this great basin; but we were not. After wasting two days in a vain endeavor to find any place within walking distance of Roberval suited to our work, we turned our backs on Lake St. John and went down the railroad about sixty-five miles to Lake Edward.

The town of Lake Edward is on the northern end of the lake of the same name, and lies in the heart of a rich Hudsonian forest. The lake is about twenty-three miles long and terminates in the Jeannotte river. A great part of the shores of both lake and river are still clothed in primeval forests, but the busy saw-mill at Lake Edward, with its daily consumption of five hundred logs, is fast eating up this old growth and leaving behind only white birch and small second-growth spruce and fir.

This forest contains very few species of trees, of which the white birch is the commonest, with spruce and fir in about equal numbers next, and now and then a solitary white pine. The mountain ash and the spiked maple are very common, but hardly attain to the dignity of trees. In many places where the forest has been burnt a dense growth of raspberry bushes and dwarf cherry immediately springs up, and it is many years before the trees again take possession of the land. The monotony of the forest is here and there broken by little alder swamps along the many brooks, or by open sphagnum barrens with their clumps of *Ledum latifolium* and *Kalmia glauca*. In this northern latitude the fallen trees lie on the ground for a long time without decaying, and the accumulation of centuries covered by a luxuriant growth of moss makes walking through the forest a matter of the greatest difficulty. There are no roads anywhere, all the logging being done by water, but the abundance of lakes connected by rivers or brooks makes the country very accessible by canoe.

Trapping in the northern forest in the tangled mass of fallen trees and granite boulders covered by a deep growth of moss is a very different thing from trapping in open country. In the open southern woods, with but little rubbish on the ground, one takes as much in traps that have been set a week or ten days in one spot as one does the first day, and when the supply is used up, it is then little use to move the trap, as all the small mammals from near about have already found it. It is not so in the northern forest, where distance means much more and the small mammals are very local and do not travel far. The first day or two will exhaust the supply in one spot, but a move of only a few yards will again yield specimens in about the same number.

We were disappointed in not getting *Phenacomys*, but it is possible that the animal does occur here locally.

There were a few mammals we knew to occur in the immediate vicinity of Lake Edward that we were unable to get, and perhaps it is as well to mention these. Flying squirrels and chipmunks were said by the Indians and French Canadians to occur, but we saw none. Moose and caribou were both quite plentiful. I found a fresh caribou track one morning where the animal had come out of the forest and walked along the railroad for about a mile.

The red fox was abundant, and we found many signs. The section man on the railroad told me foxes were sometimes killed

by the train, and that he had picked them up on several occasions when going over the road on his hand-car in the morning. The trappers get otter every winter, and the black bear is fairly common. The wolverine is still sometimes met with and occasionally this expert trap robber proves a great nuisance to the trapper in the winter by finding his line of deadfalls, following it up, demolishing every one, and eating the bait and any animal that may have been caught.

Sciurus hudsonicus Erxl. Red Squirrel. 5 specimens.

Red squirrels were extremely abundant and a great nuisance, as they persisted in getting into our mouse traps, and as the traps were usually not strong enough to kill them outright they carried away a great many. A few that were caught around the neck in the Schuyler mouse traps were killed. We also caught a great number in steel traps baited with salt pork or meat.

Castor canadensis Kuhl. American Beaver. 3 specimens.

Beaver are still quite common in all this region, but are relentlessly pursued by the Indians and are decreasing very fast. The nearest beaver to Lake Edward were on the Jeannotte river. We were too busy to go after them ourselves and so hired two Indians and sent them down the Jeannotte. In five days they returned with a whole family of beaver—an old male and female and three young. Unfortunately they had utterly ruined the old female and one of the young by shooting them in the heads with their rifles. The old male was a very fine, large beaver and according to the Indians was five years old. The specimen measured: total length, 1,130; tail, 410; hind foot, 176.

The same two Indians, in the winter of 1894–1895, killed sixty beaver and told me they expected to get about forty this winter. In addition to the Indians, there are many other trappers working this country every season with great thoroughness, and the beaver stand but a poor chance.

Synaptomys fatuus sp. nov. Northern Lemming Mouse. 9 specimens.

Type No. 3857, coll. of E. A. and O. Bangs; female adult, from Lake Edward, Quebec, September 28, 1895. Total length, 125; tail, 16; hind foot, 19. E. A. and O. Bangs, collectors.

General characters.—Slightly smaller and darker than *S. cooperi*, with smaller and lighter skull and much narrower and shorter incisors. Coat very long and full.

Color.—Upper parts sepia brown, thickly interspersed with black-tipped hairs; under parts slate gray, with in places a slight brownish tinge; feet drab; tail nearly unicolor, slightly paler below, darker at the tip, and sparsely haired.

Skull.—The skull, as compared with that of *S. cooperi*, is rather smaller and narrower, with less spread to the zygomata and more slender rostrum.

Teeth.—The molar teeth are substantially the same as in *S. cooperi*, but the incisors are very much narrower and shorter.

Measurements of nine Specimens of *S. fatuus*.

No.	Sex and age.	Date.	Total length.	Tail.	Hind foot.
3857	♂ ad.	Sept. 25, 1895	125	16	19
3855	♀g. ad. . . .	Sept. 27, 1895	114	11 (bobtail)	18
3854	ad.	Sept. 24, 1895	123		20
3858	♀g. ad. . . .	Sept. 27, 1895	114	15	17.5
3859	♀g. ad. . . .	Sept. 24, 1895	113	19	19
3856	♀g. ad. . . .	Sept. 27, 1895	114	15	17
3861	♀g.	Sept. 19, 1895	110	17.5	18
3860	♀g.	Sept. 17, 1895	111	16	18
3862	♀g.	Sept. 25, 1895	93	15	17

This strange little animal was common about Lake Edward and inhabited every variety of country—the sphagnum bogs, the deep spruce forest, and the banks of little streams. It lived everywhere in the deep moss. It was hard to trap and seemed not to care for any kind of bait, but blundered into the traps that happened to be in its way. We caught thirteen examples of *S. fatuus*, four of which were so badly eaten by shrews or mice as to be worthless.

Microtus fontigenus * sp. nov. Forest Meadow Mouse. 8 specimens.

Type No. 3837, coll. of E. A. and O. Bangs, female adult from Lake Edward, Quebec, September 28, 1895. Total length, 151; tail, 41.25; hind foot, 21. E. A. and O. Bangs, collectors.

General characters.—Size small; colors dark, with no rufous shades; rostrum very slender; audital bullæ very large and round.

Color.—Upper parts dark sepia brown, with a slight admixture of black-tipped hairs; under parts olive gray to smoke gray; tail sparsely haired and bicolor, black above, gray beneath.

Skull.—The skull is small, with very slender rostrum, and differs from that of any *Microtus* I am familiar with in having very large and round audital bullæ, about as in the genus *Evotomys*. The basioccipital is narrow and does not have a distinct median keel.

Teeth.—The pattern of enamel folding of the molar teeth is substantially as in *M. pennsylvanicus*.

Size.—No. 3837, female adult (type): total length, 151; tail, 41.5; hind foot, 21. No. 3840, male adult: total length, 150; tail vertebræ, 45; hind foot, 21.

This *Microtus* was not common. We found it usually along the banks of the little spring brooks in the deep forest and in small sphagnum bogs, where it lived under old logs or in holes in the moss, after the manner of an *Evotomys*. Nowhere did it make runways like those of *M. pennsylvanicus*,

* Fontigena = born beside springs or fountain heads; a poetical term applied to the Muses, and therefore appearing in literature only in the feminine.

and it appeared to be confined to the forest. I hunted in vain the marshy spots and alder swamps and the cleared fields, places *M. pennsylvanicus* would have delighted in, but found no trace of any *Microtus* there, and trapping in such localities yielded nothing but shrews. We caught only eight examples of *M. fontigenus*.

Microtus chrotorrhinus (Miller). Rufous-nosed Meadow Mouse.
9 specimens.

This beautiful little inhabitant of the deep spruce forest was not common. I consider it one of the rarest of our small mammals. It is easy to catch, and a day or two of trapping in any place is usually sufficient to capture all that are there. *M. chrotorrhinus* is apparently wholly diurnal. On account of the depredations of shrews I visited our traps regularly twice a day—once at daylight in the morning and again just before dark. I never found a *chrotorrhinus* on any morning visit. Although these specimens were taken nearly three hundred miles north of the type locality (Mt Washington, New Hampshire), they are in every way typical and show no approach to *M. xanthognathus*.

Fiber zibethicus (L.) Muskrat. 9 specimens.

Exceedingly abundant on all the marshy shores of the lakes and rivers. We set a line of sixteen traps one afternoon and on visiting them next morning found fourteen muskrats. One trap I set on a floating log that lay across a little brook where it emptied into Lake Edward and caught a muskrat in it every night during our stay.

Evotomys gapperi (Vig.). Red-backed Mouse. 36 specimens.

The commonest small mammal at Lake Edward. The red-backed mouse of this region is the small, dark-colored form of the spruce belt, true *gapperi*.

Evotomys fuscodorsalis Allen. Dusky-backed mouse. 4 specimens.

Apparently this little known *Evotomys* was rare, four examples being all we caught. These were taken in two localities about three miles apart and two in each place. In both places they were caught among loose boulders on side hills covered by moss and overgrown by spruce, fir, and white birch.

Peromyscus canadensis abietorum subsp. nov. Hudsonian White-footed Mouse. 4 specimens.

Type No. 2205, coll. of E. A. and O. Bangs, female adult, from James river, Nova Scotia. Coll. by C. H. Goldthwaite, August 8, 1894. Total length, 200; tail, 103; hind foot, 20 (measured in flesh by collector).

General characters.—Similar to *Peromyscus canadensis* (Miller), from which it differs in being a uniform dark gray above in both young and adult, never showing the russet and yellowish shades of old examples of *P. canadensis*.

Color.—Old adult: upper parts dark smoke gray, slightly darker along the middle of the back, causing an indistinct median band; under parts white, the hairs plumbeous at their base; feet and hands white; tail bi-colored, black above, white below, hairy, and longer than the head and body; pencil long.

The size, proportions, and skull are the same as in true *canadensis*.

This white-footed mouse is the Northern representative of *P. canadensis*, which it resembles very closely in everything but color. When a large series of each is laid out side by side the difference in color is very striking, the uniform gray of the adults of *abietorum* being in marked contrast to the russet and yellow shades of the adults of *canadensis*. *P. abietorum* has a wide range in the spruce and fir forests of the north. It was not common at Lake Edward, and, as all we caught were immature, I have taken for the type a fine old adult from James river, Nova Scotia, from whence I have a good series, collected by Mr. C. H. Goldthwaite in the summer of 1894.

Zapus insignis Miller. Woodland Jumping Mouse. 1 specimen.

Either *Zapus insignis* was very rare at Lake Edward or they had already hibernated, the weather being quite cold, with a heavy frost nearly every night during our stay. This species is very easy to catch and we set many traps in its favorite haunts along the little brooks in the forest. The only one caught was exceedingly fat.

Lepus americanus Erxl. American Hare. 4 specimens.

Very abundant. We caught a number in steel traps baited with salt pork. These traps were set after the Indian fashion, a semicircle of slabs cut from the spruces being set up and the top covered over with spruce boughs. The bait was put inside and the trap in the opening. One morning I shot a hare asleep on top of a board fence three feet high, beside the railroad in the settlement. How he could have jumped onto this fence and balanced himself there is a mystery.

Vespertilio subulatus Say. Bat. 1 specimen.

Two bats of this species flew into the house on different evenings.

Blarina brevicauda (Say). Short-tailed Shrew. 5 specimens.
Common everywhere.

Sorex (Microsorex) hoyi Baird. Hoy's Shrew. 1 specimen.
Apparently rare.

Sorex (Neosorex) albibarbis (Cope). Water Shrew. 1 specimen.
Apparently rare.

Sorex personatus Geoff. St. Hilaire. Common Shrew. 18 specimens.
Extremely abundant and inhabiting every variety of country.

Condylura cristata (L.) Star-nosed Mole. 1 specimen.

No work of this mole was seen anywhere. The one taken was caught in a cyclone trap set under an old log. Probably the animal lives below the deep layer of moss with which everything is covered, and therefore gives no sign of its presence.

Mephitis mephitica (Shaw). Hudsonian Skunk. 5 specimens.

Skunks were common about the settlement. We trapped four and took another skull from an animal that had been killed some months previously. These skunks are highly interesting, being extreme examples of the Northern short-tailed form to which I have restricted Shaw's name *mephitica*.* They measure as follows:

No.	Sex and age.	Total length.	Tail.	Hind foot.
3801	♂ old ad.....	585	193	75
3803	♂ ad.....	617	202	79
3804	♂ ad.....	592	202	76
3802	♀ old ad.....	565	159	75

The skulls of all lack the median palatal spine usually seen in the skulls of Southern skunks.

Putorius (Lutreola) vison (Schreber). Little Black Mink. 6 specimens.

Mink were abundant in spite of the fact that great numbers are trapped every winter. All we took are very small and dark-colored and are extreme examples of the beautiful northern form, true *vison*.

Putorius (Gale) richardsoni cicognani (Bp.) Small Brown Weasel. 3 specimens.

We caught four of these little weasels, but one was partly eaten and ruined by some animal. All were caught in traps set for marten and baited with salt pork.

Mustela americana Turton. Marten or Sable. 1 specimen.

We set many traps for this elusive pirate of the forest, but succeeded in catching only one, a very dark-colored old female.

It is of interest that the trappers here never get the fisher (*M. pennanti*) and say that it does not occur at all in this whole region.

* Proc. Bost. Soc. Nat. Hist., vol. XXVI. Author's edition, July 31, 1895, p. 5.

Cranial Measurements of *Synaptomys fatusus*, *S. cooperi*, and *Microtus fontigenus*.

Number.	Sex and age.	Locality.	Basilar length (basion to front of premaxillary).	Basilar length of Hensel.	Occipite-nasal length.	Zygomatic breadth.	Mastoid breadth.	Interorbital breadth.	Greatest height of cranium above palate.	Greatest height of cranium above lip of foramen magnum.	Length of upper molar series on alveoli.	Greatest length of single half of mandible.	Breadth of muzzle at root of zygoma.
<i>Synaptomys fatusus</i> Bangs.													
3857	Type } ♀ ad. }	Quebec, Lake Edward	24.0	23.0	26.0	15.2	11.8	3.0	8.2	6.2	6.6	15.8	5.2
3854	♂ ad.	"	23.4	22.0	25.0	15.8	12.0	3.2	8.4	6.2	6.8	16.0	5.0
3855	♂ ad.	"	23.6	21.8	25.0	15.6	11.8	3.2	7.8	6.0	6.2	15.4	5.0
3856	♂ yg. ad.	"	22.6	21.4	24.2	14.4	11.4	3.0	7.8	6.2	6.8	15.2	4.8
3858	♀ yg. ad.	"	22.0	20.2	23.0	14.2	11.4	3.0	7.6	6.0	6.2	15.2	4.4
<i>Synaptomys cooperi</i> Baird.													
1037	♂ ad.	Massachusetts, Wareham	24.0	22.2	25.0	16.6	12.2	3.2	8.4	7.0	7.0	16.0	5.2
215	♀ ad.	"	24.2	22.8	24.8	16.8	13.0	3.2	8.6	7.0	6.8	16.0	5.4
<i>Microtus fontigenus</i> Bangs.													
3837	Type } ♀ ad. }	Quebec, Lake Edward	24.4	23.2	25.6	14.0	11.2	3.8	8.4	7.0	6.2	15.6	4.2
3840	♂ ad.	"	23.4	22.4	24.4	14.2	11.6	3.4	7.8	7.0	6.2	15.8	4.8
3839	♂ ad.	"	23.4	22.0	24.8	14.2	11.6	3.6	7.8	6.8	6.2	15.0	4.4
3841	♂ ad.	"	23.2	22.0	24.8	13.8	11.0	3.8	8.0	7.0	6.2	15.2	4.4
3838	♀ ad.	"	24.0	23.0	25.0	14.2	11.4	8.2	7.0	6.4	15.8	4.6